VISION CONDITIONS

Certain visual conditions may impair an individual's ability to drive safely. The attached Vision Conditions and Actions Chart, Vision Conditions Definitions/Functional Impairments Chart, Other Conditions Affecting Vision Chart, and a Glossary of Terms define~~s~~ common vision conditions and provide information regarding functional impairments. The charts also provide information regarding the stability of each condition, and actions taken by the department, including restrictions that may need to be imposed on the driving privilege.

Vision Standards
The department's vision screening standard is the ability to see 20/40 with both eyes together, with or without corrective lenses. Drivers who do not meet the vision screening standard are referred to a vision specialist who must examine the driver and complete a Report of Vision Examination (form DL 62 [Rev. 4/2007]) (see Appendix C). The driver must submit the completed DL 62 to the department. Limited term licenses, temporary licenses or extensions are not issued to drivers with low vision who do not meet the vision screening standard until a completed DL 62 has been reviewed and it is determined that the vision condition does not impair the person's ability to drive safely. Individuals with extremely poor vision (visual acuity of 20/200 or worse), may not be scheduled for a driving test.

Following review of the Report of Vision Examination, the driver may be scheduled for a Supplemental Driving Performance Evaluation (SDPE) to determine whether the vision condition impairs the ability to drive or whether the driver can adequately compensate for the vision condition. A revocation may be warranted, if the SDPE is failed, the vision condition is severe, and the driver is unable to compensate for the vision condition.

Licensing Actions:
If the department determines from the evidence that the condition could improve and/or the examiner believes driving skills could improve with additional training, restrictions that limit driving exposure, but allow for additional training or practice, can be imposed. Drivers who want to learn to drive or retain their driving privilege may be issued a restricted license or instruction permit for a sufficient length of time suitable to their needs.

An immediate revocation is imposed pursuant to Vehicle Code Section 13953 after an examiner gives ~~a~~ an SDPE to a low-vision driver who has performed dangerously and the vision condition renders the person unsafe to drive. The driver may request a hearing after receiving a notice of suspension or revocation.

Vision Conditions and Actions Chart
The Vision Conditions and Actions chart describes the procedures the department follows when evaluating drivers with possible vision-related driving disabilities. The chart applies to noncommercial Class C and Class M drivers. The Vision Conditions Definitions/Functional Impairments Chart identifies, where appropriate, one or more of the following seven vision functions that may be impaired by the vision condition:

Central Vision/Visual Acuity:
When a driver notices something that may be important to his/her driving such as a road sign, hazard, or change in the traffic flow, central vision is used to discern detail, identify, and/or recognize what the driver is looking at. Visual acuity is the finest spatial detail which may be perceived.

The department uses Snellen wall charts to screen driver license applicants for a far visual acuity of no worse than 20/40 in Snellen notation. Snellen wall charts are based on the fact that impaired visual acuity makes it harder to discriminate the fine differences that distinguish one letter from another. Passing this test means that the applicant can read the letters at 20 feet or more that are large enough for a young and healthy observer to read at 40 feet.

Visual acuity impaired by one or more vision conditions can result in the driver failing to read signs and/or recognize hazards in a timely manner.

Peripheral Vision:
Normally when you look at something, you center the visual image in the central portion of your visual field. Peripheral or side vision is the field of view that surrounds the central portion of the vision field. In driving, peripheral vision is used in part to detect information that may be important for safe driving. This kind of information includes road signs, appearances of hazards, and changes in the flow of traffic. When the healthy driver notices something important, head and eye movements are used to move the visual image into the central portion of the visual field. In other words, the driver moves his or her head and eyes to look at the object or event of interest.

Peripheral vision is also used in controlling the vehicle. When the driver looks in the rear view mirror, peripheral vision is used to monitor traffic in front of the vehicle. In keeping the vehicle centered in the lane, peripheral vision is used to monitor the lane boundaries.

Peripheral vision impaired by one or more vision conditions can result in the driver failing to react to a hazard coming from the driver's far left or far right, failing to heed a stop light suspended over an intersection, weaving while negotiating a curve, and/or driving too close to parked cars.

Night Vision:
The visual ability of two drivers may be about the same during the daylight hours and be markedly different at night. Driving safely at night requires seeing well not only under low illumination, it also requires one to see low contrast objects. Someone wearing dark clothes and crossing the street in front of the driver is much harder to detect at night than during the day because there is much less contrast at night between darkly clothed pedestrians and a dark background.

Night vision impaired by one or more vision conditions can result in the driver at night failing to react to hazards located directly in front of the vehicle, tailgating, and/or failing to steer when necessary because the driver is unable to see low contrast features of the roadway such as its edges and irregularities in the road surface.

Glare Resistance and Glare Recovery:
Glare is the disruption of vision due to a veiling luminance (such as the light from the headlights of oncoming traffic at night) being superimposed on the visual image (such as the outline of the car ahead of you).

Glare resistance is the extent to which the driver can still see critical objects and events while facing a steady source of glare such as the setting sun or the light from the headlights on a steady stream of oncoming traffic at night.

Glare recovery is the rapidity with which the driver's vision functioning returns to what it was before the glare was encountered.

Glare resistance/glare recovery impaired by one or more vision conditions can result in the driver being blinded by a glare source and consequently missing curves in the road, striking unobserved pedestrians, and/or crashing into the rear of slow-moving, stalled, or stopped vehicles.

Judgment of Distance:
Judgment of distance impaired by one or more vision conditions can result in the driver stopping too short of the limit line or inside the intersection, turning too wide or too short, and/or failing to maintain speed and/or following distance appropriate for prevailing driving conditions.

Eye Movements:
Eye movements impaired by one or more vision conditions can result in visual scanning deficiencies. There may be uncontrolled up and down or random scanning rather that side-to-side scanning. There could also be a tendency to look at a specific object too long or continuously look straight ahead. Consequently, the driver may fail to react to hazards and fail to heed traffic signs and signals. Changing lanes could be especially hazardous if the driver spends an excessive amount of time looking to the rear of the vehicle.

Visual Perception:
Visual perception is the processing of incoming visual information. Visual perception impaired by one or more vision conditions can result in difficulties with performing several visual tasks at the same time. The driver may have impaired ability to:

- switch attention to important events without interference from distracters or clutter in the visual environment,
- distinguish foreground from background,
- determine the position of other vehicles, signs, and pedestrians relative to self and to each other.

Consequently, the driver may brake and/or stop unexpectedly, maintain inordinately long following distance (to keep from having to react quickly), fail to react to hazards, and/or fail to heed traffic signs and signals.

Condition Definitions/Functional Impairments Chart

Vision Condition	Definition	Possible Functional Impairments
ALBINISM	Congenital absence of pigment within the eye. Associated with poor acuity, light sensitivity, and nystagmus.	• Decreased acuity • Problems with glare • Abnormal eye movements
AMBLYOPIA (Lazy Eye)	A reduction in the acuteness of vision without apparent eye disease. This condition generally affects only one eye and cannot be entirely corrected by lenses.	• Central Vision/Visual Acuity • Night Vision • Judgment of Distance • Peripheral Vision
APHAKIA **(also see Cataract)**	Absence of the crystalline lens of the eye; usually the result of cataract removal surgery.	• Central Vision/Visual Acuity • Glare Resistance/Glare Recovery • Judgment of Distance • Peripheral Vision • Eye Movements
ASTIGMATISM (Also see Keratoconus)	A condition in which the visual image is poorly focused. Generally correctable with lenses.	• Central Vision/Visual Acuity • Glare Resistance/Glare Recovery
BRAIN TUMOR OR LESION causing vision disorders. (Also see Head Trauma and Hemianopia.)	A tumor may be in the brain or skull. It may be a primary tumor or part of another tumor. A brain lesion refers to a portion of the brain that has been damaged. The tumor or lesion may cause: • Swelling. • inflammation of the optic nerve. • inflammation of the visual center of the brain. Any of these disturbances may result in a disruption of the processing of vital information.	• Central Vision/Vision Acuity • Night Vision • Judgment of Distance • Peripheral Vision • Abnormal Eye Movements • Visual Perception

Vision Condition	Definition	Possible Functional Impairments
CATARACT	Opacity or clouding of the crystalline lens. Usually correctable by surgery. May be associated with a diabetic condition or other metabolic diseases. May also be caused by age, eye injury, or heredity.	• Central Vision/Visual Acuity • Night Vision • Glare Resistance/Glare Recovery • Judgment of Distance • Peripheral Vision
CEREBRAL PALSY	Paralysis resulting from developmental defects in the brain or brain trauma at birth.	• Central Vision/Visual Acuity • Peripheral Vision • Night Vision • Glare Resistance/Glare Recovery • Judgment of Distance • Abnormal Eye Movement • Visual Perception
COLOR VISION DEFICIENCY	A hereditary condition that produces a reduced ability to distinguish certain shades of color.	• This condition frequently involves red and green colors. In rare cases, all colors are perceived as gray (monochromacy). Color deficiency is largely inconsequential unless visual acuity is involved.
CONGENITAL NYSTAGMUS	Involuntary repetitive eye movements that are present from birth. **NOTE:** Nystagmus may be acquired after birth and would be associated with other medical conditions.	• Decreased Acuity • Abnormal eye movements. **NOTE:** Some individuals with this vision condition will turn their head to look at objects.
CORNEAL OPACITY	The cornea is normally clear; however, it can become cloudy or opacified due to the presence of scar tissue, an injury, or infection. Scar tissue prevents light from passing through the cornea resulting in vision loss. Scar tissue can be removed surgically or by the use of a laser. When scar tissue or opacification extends deeper into the corneal tissue, a corneal transplant may be necessary.	• Central Vision/Vision Acuity • Night Vision • Glare Resistance/Glare Recovery • Judgment of Distance • Peripheral Vision **NOTE:** Corneal Opacity impairs vision functions much like a cataract.

Vision Condition	Definition	Possible Functional Impairments
DECREASED PERIPHERAL VISION (Tunnel Vision)	A reduction or blind spots in the peripheral field of vision.	• Night Vision • Peripheral Vision Note: If the condition is severe, the person will be unable to compensate for the condition even with head movements.
DIABETIC RETINOPATHY	A disorder of the retina resulting from diabetes. This condition damages the receptor cells in the eyes. Retinopathy results from blood leaking into the clear fluid (vitreous) inside the eye. This can cause the retina to detach because of the weight of the blood within the vitreous.	• Central Vision/Visual Acuity • Glare Resistance/Glare Recovery • Night Vision • Peripheral Vision
DIPLOPIA	Double vision.	• Central Vision/Visual Acuity • Night Vision • Peripheral Vision • Visual Perception
DIPLOPIA (Uncorrectable)	Double vision from misalignment of the eyes. Double vision may vary in degree when looking in different directions.	• Reduced Depth Perception • Visual Field Loss • Abnormal Eye Movements
GLAUCOMA	Characterized by excessive pressure within the eyeball. Damages the optic nerve. Treatable by eye drops and/or surgery to prevent further damage. May be associated with a diabetic condition, high blood pressure, or hardening of the arteries.	• Night Vision • Glare Resistance/Glare Recovery • Peripheral Vision
HEAD TRAUMA (Also see Hemianopsia and Brain Tumor.)	Focusing difficulties and multiple vision conditions are caused by injuries to the head.	• Central Vision/Vision Acuity • Judgment of Distance • Peripheral Vision • Abnormal Eye Movements • Visual Perception

Vision Condition	Definition	Possible Functional Impairments
HEMIANOPSIA (Hemianopia) (Also see Decreased Peripheral Vision)	Loss of vision for one half of the visual field of one or both eyes. A disconnection between the eye and brain. The visual image seen by the eye does not travel to the brain.	• Central Vision/Visual Acuity • Night Vision • Peripheral Vision • Visual Perception
HYPEROPIA (HYPERMETROPIA)	Farsightedness. There will be a loss of visual acuity for near objects. There is little or no impairment unless corrective lenses obstruct peripheral vision.	• Central Vision/Visual Acuity • Peripheral Vision (If lenses in glasses are very thick.)
KERATOCONUS	Cone-shaped deformity of the cornea.	• Central Vision/Visual Acuity • Glare Resistance/Glare Recovery • Visual Perception
MACULAR DEGENERATION	Degeneration of a portion of the retina (macula) responsible for central vision and color perception. This condition is more common in older adults. It will cause reduction in color vision, an inability to see fine detail, read road signs, and identify objects. The person will also have difficulty in judging closing speeds on approaching objects.	• Central Vision/Visual Acuity • Glare Resistance/Glare Recovery • Night Vision • Judgment of Distance
MONOCULAR	Useful vision in only one eye and the other eye is blind or absent.	• Reduced Depth Perception • Visual Field Loss
MONOVISION	Monovision is one eye focused for distance vision and one eye focused for close-up vision (approximately 16 inches away). This procedure is generally attained by wearing contact lenses, surgery, or by leaving one eye untreated. The procedure reduces or eliminates the need for corrective lenses.	• Reduced Visual Acuity in the untreated eye or the eye focused for close-up vision.

Vision Condition	Definition	Possible Functional Impairments
MULTIPLE SCLEROSIS	Inflammatory disease of the Central Nervous System. Can cause nystagmus, diplopia, and/or optic nerve damage.	• Central Vision/Vision Acuity • Visual Perception • Night Vision • Judgment of Distance • Peripheral Vision • Eye Movements • Glare Resistance/Glare Recovery • **Note:** Fatigue and/or heat may affect stamina which reduces the ability to drive safely. The condition may be worse in the afternoon due to fatigue.
MYOPIA	Nearsightedness. Loss of visual acuity for distant objects, unless the condition is corrected.	• Central Vision/Visual Acuity • Eye Movements • Night Vision • Visual Perception • Peripheral Vision
NYSTAGMUS	Reptitive involuntary eye movements.	• Central Vision/Visual Acuity • Glare Resistance/Glare Recovery • Eye Movements **NOTE:** If this condition is severe, the person will have a tendency to look at objects from the side by turning his/her head. The person may also be prescribed a bioptic telescopic lens.
POSTERIOR CAPSULE OPACIFICATION (Post. Cap. Opac.)	Scar tissue developing behind the intraocular lens implants which can lead to blurring of vision. This occurs in up to 25 percent of patients after cataract surgery and is cured by laser treatment when necessary. After laser treatment (capsulotomy) the diagnosis should no longer exist.	• Decreased Visual Acuity • Problems With Glare • Contrast Sensitivity Loss • Poor Night Vision

Vision Condition	Definition	Possible Functional Impairments
PSEUDOPHAKIA (Also see Cataract)	Replacement of the natural lens with a plastic lens called an Intra-Ocular Lens (IOL). Primarily used as a treatment for cataract removal.	• Central Vision/Visual Acuity • Glare Resistance/Glare Recovery • Judgment of Distance • Peripheral Vision • Eye Movements
QUADRANTANOPIA	Loss of corresponding quadrants of the visual field in both eyes, i.e., right lower quadrant in the right and left eyes, usually due to brain injury from a stroke, tumor, or surgery. The quadrant affected will determine the visual limitation while driving, i.e., right lower quadrant would not allow sight of cars or pedestrians to the right or in the right hand mirror without the driver turning to the right.	• Visual Field Loss • Possible Reduce Depth Perception
RETINAL DAMAGE	Areas of vision loss from bleeding, swelling, or scarring of the retina associated with inflammation, blood vessel damage, or laser treatment. The damage is usually permanent and is associated with loss of portions of the visual field.	• Visual Field Defect • Decrease Visual Acuity • Contrast Sensitivity Loss • Poor Night Vision • Color Defect
RETINAL DETACHMENT	Small holes or tears in the retina which can lead to retinal detachment. Portions of the retina lift away from the wall of the eye. Detachment, tears, and holes can usually be repaired. This condition may be associated with a diabetic condition or eye injury.	• Central Vision/Visual Acuity • Night Vision • Glare Resistance/Glare Recovery • Judgment of Distance • Peripheral Vision

Vision Condition	Definition	Possible Functional Impairments
RETINITIS PIGMENTOSA	Degeneration of the retina. This condition usually affects both eyes.	• Central Vision/Visual Acuity • Night Vision • Glare Resistance/Glare Recovery • Judgment of Distance • Peripheral Vision
STRABISMUS	Misalignment of the eyes.	• Central Vision/Visual Acuity • Judgment of Distance
STROKE	Bleeding into the brain caused by a rupture or occlusion of an artery which may lead to sudden loss of consciousness followed by paralysis.	• Central Vision/Vision Acuity • Visual Perception • Night Vision • Judgment of Distance • Peripheral Vision • Eye Movements • Glare Resistance/Glare Recovery
VISUAL FIELD LOSS	Loss of portions of the visual field from damage to the eye or brain resulting from a wide variety of diseases or disorders. There could be other visual problems depending on the diagnosis.	• Visual Field Loss • Other functions may be impaired depending on the underlying disease process.

Vision Conditions and Actions Chart

Stable Vision Conditions	
• Albinism—Stable • Amblyopia—Stable • Aphakia—Stable • Congenital Nystagmus—Generally Stable • Diplopia (Uncorrectable)—Generally Stable • Hyperopia—Stable	• Monocular—Stable for the unsighted eye • Monovision—Generally Stable • Nystagmus—Stable • Pseudophakia—Stable • Quadrantanopia—Possibly Stable • Strabismus—Stable

The presence of the above conditions will result in the following actions:

Action Needed	***If…***	***Then…***
No Action	• Vision screening standard is met, or • Condition was previously identified and the department has a record.	N/A
SDPE	• Vision screening standard is not met, or • Department does not have a record. **Note:** Additional guidelines or requirements apply to the following conditions: **Monocular**—Vision screening standard not met in sighted eye, or the person has developed the loss of vision in one eye since the last driver license renewal. **Monovision**—Vision screening standard not met with the eye treated for distance vision. **Quadrantanopia**—Additional caution should be exercised by examiners during the SDPE when the customer's field of view is less than 100 degrees.	Require a DL 62. If the SDPE is: • **Passed** —Issue a license —Impose appropriate restrictions. **Note:** Additional guidelines or requirements apply to the following conditions: **Amblyopia**—Issue a limited term license, if the customer's visual acuity in each eye is 20/100 or worse. **Aphakia**—Issue a limited term license, if the customer's visual acuity is worse than 20/40 in one eye and there is a vision impairment in the other eye that is progressive. If the SDPE is: • **Failed**, determine if: —The customer may improve with more training or practice. —An ADPE may be appropriate (see ADPE below). —The customer's driving errors are so serious that revocation is necessary (see Immediate Revocation below).

Action Needed	***If…***	***Then…***
ADPE	• The customer failed the SDPE, **and** • The driving environment in which the customer needs to drive is less demanding than the driving test route at the DMV field office, **and** • The customer consents to specific area restrictions.	If the customer **passes** the ADPE: • Issue a license. • Impose appropriate restrictions that reduce the customer's scope of driving. • Issuing a limited-term license may be appropriate, if there are valid concerns over the customer's physical condition, judgment, and/or reactions. If the customer **fails** the ADPE, or the driving errors are so serious that revocation is necessary: • Revoke the customer's license (see Immediate Revocation below).
Immediate Revocation	The customer: • Fails the SDPE, and the ADPE is not an option. • Fails the ADPE. • Makes driving errors that are so serious that issuing a license would endanger the motoring public.	Issue an Order of Suspension/Revocation (DS 439 FO), under the authority of VC §13953, before the customer leaves the office or the examiner leaves the customer's residence. Fax a copy of the DS 439 FO to the local Driver Safety office immediately, or after returning to the office from an ADPE to update the driving record.

Progressive Vision Conditions	
• Astigmatism—Progressive • Cataract—Progressive • Corneal Opacity—Potentially Progressive • Diabetic Retinopathy—Progressive • Diplopia—Progressive • Glaucoma—Progressive • Hemianopsia—Progressive • Keratoconus—Progressive	• Macular Degeneration—Progressive • Myopia—Progressive • Decreased Peripheral Vision—Progressive • Posterior Capsule Opacification—Usually Progressive • Retinal Damage—Possibly Progressive • Retinal Detachment—Progressive • Retinitis Pigmentosa—Progressive • Visual Field Loss—Progressive

The presence of the above conditions will result in the following actions:

Action Needed	***If…***	***Then…***
No Action	Vision screening standard is met. **Note:** Additional guidelines or requirements apply to the following conditions: **Cataract/Corneal Opacity**—No action, if the vision screening standard is met and the customer does not have any other vision condition that requires a driving test. **Diabetic Retinopathy**—Only refer the customer to Driver Safety, if the customer is newly diagnosed and uses insulin to treat his/her diabetic condition. **Decreased Peripheral Vision**—No action, if the customer's field of vision is greater than 20 degrees in each eye (see SDPE below).	N/A
SDPE	Vision screening standard is not met. **Note:** Additional guidelines or requirements apply to the following conditions: **Decreased Peripheral Vision**—Requires an SDPE if the DL 62 shows that the customer's field of view is 20 degrees or less in each eye. **Diplopia, Hemianopsia**, **Post Capsule Opacification, and Retinal Damage**—Require an SDPE, if the condition exists in one or both eyes.	If the SDPE is: • Passed —Issue a limited term license. —Consult the prognosis section of the DL 62 to determine when the customer should return to DMV. —Impose appropriate restrictions.

Action Needed	***If…***	***Then…***
SDPE, *continued*	**Visual Field Loss**—Require an SDPE, if the customer has any visual field loss. **Note:** Additional caution should be exercised by examiners during the SDPE when the customer's field of view is less than 100 degrees.	If the SDPE is: • Failed, determine if: —The customer may improve with more training or practice. —An ADPE may be appropriate (see ADPE below). —The customer's driving errors are so serious that revocation is necessary (see Immediate Revocation below).
ADPE	• The customer failed the SDPE, **and** • The driving environment in which the customer needs to drive is less demanding than the driving test route at the DMV field office, **and** • The customer consents to specific area restrictions.	If the customer passes the ADPE: • Issue a limited term license. • Impose appropriate restrictions that reduce the customer's scope of driving. If the customer fails the ADPE, or the driving errors are so serious that revocation is necessary: • Revoke the customer's license (see Immediate Revocation below).
Immediate Revocation	The customer: • Fails the SDPE, and the ADPE is not an option. • Fails the ADPE. • Makes driving errors that are so serious that issuing a license would endanger the motoring public.	Issue an Order of Suspension/Revocation (DS 439 FO), under the authority of VC §13953, before the customer leaves the office or the examiner leaves the customer's residence. Fax a copy of the DS 439 FO to the local Driver Safety office immediately, or after returning to the office from an ADPE to update the driving record.

Medical Conditions that may Affect Vision	
• Brain Tumor or Lesion • Head Trauma	• Multiple Sclerosis • Stroke
Action Needed-Always refer to Driver Safety	
• Color Deficiency	
Action Needed-Do not refer to Driver Safety. Require a driving test for an original commercial license, non-commercial Class A (trailer) license, or a firefighter restricted license.	
• Cerebral Palsy	
Action Needed- Refer to Driver Safety unless the driver was previously approved and the department has a record of the condition.	

GLOSSARY OF VISION-RELATED WORDS AND TERMS

Acuity	Clearness, sharpness. The ability to recognize small detail. This is not the same as the ability to detect objects.
Alternating Attention	The ability to focus attention between different types of tasks. For example, reading a map while driving.
Binocular Vision	Vision from both eyes simultaneously.
Contrast Sensitivity	The ability to detect object of low contrast (objects similar in color or shape). For example, detecting an oncoming car on a foggy day or recognizing a street sign parallel to a fence.
Cornea	The clear, transparent coating over the lens and iris.
Decreased Acuity	Inability to see clearly. This can cause a delay in responding to the environment. For example, a person with decreased acuity may be slow to recognize signs at a distance. The ability to see clearly decreases as light levels decrease.
Depth Perception	The ability to see three dimensions. If depth perception is impaired, the person may have difficulty judging distances.
Divided Attention	The ability to respond simultaneously to multiple tasks. For example, maintaining the path of travel while turning the head to check blind spots.
Focused Attention	The ability to respond to specific visual, auditory, or tactile stimuli.
Glare Disability	Glare refers to the disruption of vision which results from the presence of a veiling light source. Problems of glare are typically greater under low light conditions.
Heterotropia	Deviation of the eyes due to the absence of binocular equilibrium. In other words, the vision in one eye is not balanced with the other. This can cause double vision; seeing two of the same object.
Impaired Figure Ground	Unable to distinguish foreground from background. A person affected by this impairment will have difficulty finding the "stop" sign among other stimuli in the environment. The driver may have difficulty finding dashboard controls quickly.
Iris	The colored membrane between the cornea and the lens. The iris is a muscle surrounding the pupil.
Lens	A transparent, colorless structure within the eye which focuses images and rays of light on the retina.
Macula	The most central part of the retina.
Optic Atrophy	Deterioration of the optic nerve.

Optic Nerve The nerve that carries the impulses for the sense of sight from the eye to the brain.

Optic Neuritis Inflammation of the optic nerve.

Peripheral Awareness A person may have limited peripheral vision but can have peripheral awareness if eye scanning movements are increased to compensate for the vision deficit.

Pupil The opening at the center of the iris. It dilates in low light levels and constricts in bright light. The pupil regulates the light flow on the retina.

Refractive Errors Conditions in which the lens system of the eye is not properly focused.

Retina The inside light sensitive lining of the eye which receives the image from the lens.

Selective Attention The ability to maintain a focused attention among distracting or competing stimuli. For example, driving downtown in rush-hour traffic.

Snellen Hermann Snellen (1834-1908) was a Dutch ophthalmologist who introduced a method of measuring and recording visual acuity. A fraction is used to compare a person's vision to standard vision.

Vision = distance at which **the subject** recognizes an object
distance at which **a standard eye** recognizes an object

20/40 means a person must be twice as close to an object to see its detail compared to the standard eye.

20/100 means a person must be five times as close to an object to see its detail compared to the standard eye.

Spatial Neglect The person does not acknowledge one side of the environment. This driver may drift to one side in his/her lane with little or no improvement when cued. This driver may also make unsafe lane changes or turns through crosswalks.

Spatial Relationships Deficit The person will be unable to determine their position in relationship to two or more objects in the road or their relationship to each other. This person may be able to drive in light traffic or in residential areas. However, as the complexity of the driving environment increases, the driver will have problems knowing what to do. This may result in the person slowing down in traffic to determine what to do next.

Stereoscopic Vision Binocular depth perception.

Sustained Attention The ability to maintain consistent attention during a continuous and repetitive activity such as driving on an interstate freeway for long periods of time.